

4. (Once Amended) A method of etching an organic dielectric layer over a substrate, comprising:

placing a hard mask over the organic dielectric layer;

placing a patterned photoresist layer over the hard mask layer;

placing the substrate in an etching chamber;

providing an etchant gas comprising NH_3 into the etching chamber, wherein the NH_3 has a flow rate between 5 sccm to 1500 sccm;

generating a plasma from the NH_3 , which etches the organic dielectric layer; and

simultaneously stripping the photo resist layer during the etching of the organic dielectric layer.

5. The method, as recited in claim 4, further comprising providing CH_3F while providing the etchant gas comprising NH_3 .

6. The method, as recited in claim 5, wherein the CH_3F has a flow rate between 1 sccm to 50 sccm.

7. The method, as recited in claim 6, further comprising providing an etch with an etchant gas comprising CF_4 , prior to the step of providing the etchant gas comprising NH_3 .

8. The method, as recited in claim 7, wherein the etchant gas comprising CF_4 , further comprises C_4F_8 .

9. The method, as recited in claim 8, wherein the etchant gas comprising CF₄ further comprises O₂.

10. The method, as recited in claim 9, wherein the O₂ has a flow rate of between 3 sccm and 300 sccm.

11. The method, as recited in claim 10, wherein the organic dielectric layer is made of an organic low-k material.

12. (Cancelled)

13. (Once Amended) A method of etching an organic dielectric layer over a substrate, comprising:

placing a hard mask over the organic dielectric layer;

placing a patterned photoresist layer over the hard mask layer;

placing the substrate in an etching chamber;

providing an etchant gas comprising NH₃ into the etching chamber;

generating a plasma from the NH₃, which etches the organic dielectric layer; and

simultaneously stripping the photo resist layer during the etching of the organic dielectric layer.

14. The method, as recited in claim 1, further comprising providing CH₃F while providing the etchant gas comprising NH₃.

15. The method, as recited in claim 14, further comprising providing an etch with an etchant gas comprising CF_4 , prior to the step of providing the etchant gas comprising NH_3 .

16. The method, as recited in claim 1, wherein the organic dielectric layer is made of an organic low-k material.

17. (Cancelled)

18. (Cancelled)

19. (Cancelled)

20. (New) The method, as recited in claim 13, wherein the NH_3 has a flow rate, wherein the flow rate of NH_3 is from about 100 sccm to about 1000 sccm.

21. (New) The method, as recited in claim 13, wherein the NH_3 has a flow rate from about 300 sccm to about 800 sccm.

22. (New) The method, as recited in claim 21, further comprising maintaining the substrate at a temperature between about 10°C to about 40°C during etching of the organic dielectric layer.

23. (New) The method, as recited in claim 22, further comprising providing a power input of between about 250 W to about 1000 W.

24. (New) A method of etching an organic dielectric layer disposed below a hardmask layer and over a substrate, comprising:

placing the substrate in an etching chamber;

providing an etchant gas comprising NH_3 into the etching chamber with a flow rate from about 300 sccm to about 800 sccm;

generating a plasma from the NH_3 , which etches the organic dielectric layer; and

maintaining the substrate at a temperature between about 10°C to about 40°C during the etching of the organic dielectric layer.